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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

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FEDERAL COMMUNICATIONS COMMISSION
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In the Matter of	)	
	)	
Proposals for Blanket Licensing	)	**RM 9005**
of Satellite Earth Stations Operating	)	
in the 17.7-20.2 GHz and 27.5-30.0 GHz	)	
Frequency Bands and Sharing Between	)	
Fixed Terrestrial and Satellite Services	)	
In the 17.7-19.7 GHz Frequency Bands	)	

To the Commission:

COMMENTS OF
UTC, THE TELECOMMUNICATIONS ASSOCIATION

Pursuant to Section 1.405 of the Commission's Rules, UTC, The Telecommunications Association,[1] hereby respectfully submits the following comments in response to the FCC's Public Notice to "refresh the record," IN Report No. 97-27, released September 5, 1997, in the above-captioned matter regarding sharing and licensing criteria for Geostationary Orbit/Fixed Satellite Service (GSO/FSS) earth stations operating in the 18 GHz band.

UTC is the national representative on telecommunications matters for the nation's electric, gas and water utilities, and natural gas pipelines. Over 1,300 such entities are members of UTC, ranging in size from large combination electric and gas utilities serving several million customers to small rural cooperatives. All utilities and pipelines rely on telecommunications systems, including in many instances point-to-point microwave networks, in order to meet their public service obligations. Accordingly, UTC has an interest in this proceeding as it could significantly impact the continued use and availability of the 18 GHz band for fixed microwave.

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[1] UTC was formerly known as the Utilities Telecommunications Council.

I. Commission Actions Should Not Undermine Continued Availability of 18 GHz Band For Private Point-to-Point Microwave Service

A. Essential Nature of Point-to-Point Microwave

The basis for this inquiry is a "petition for rulemaking" filed by Lockheed Martin Corporation, AT&T, Hughes Communications, Loral Space Communications, and GE American Communications, which requested that the Commission revise Part 25 of its Rules to provide for routine "blanket" licensing of GSO/'FSS earth stations operating in the 19.7-20.2 GHz band. In addition, the petition asked the FCC to initiate proceedings to develop sharing criteria and licensing and registration procedures to provide protection for GSO/FSS earth stations and Fixed Service (FS) stations operating in the 17.7-18.8 GHz band. Subsequent to the filing of the petition, Teledesic requested that the Commission allow blanket licensing for FSS operations throughout the 17.7-20.2 GHz band.

UTC and the private point-to-point microwave community, as well as other FS users, have significant concerns regarding the GSO/FSS proposals and their potentially adverse impact on the continued availability of the 18 GHz band for FS. At the outset is important for the FCC to understand the vital nature of many FS operations to maintaining the nation's critical infrastructure.

Among the various media that are employed in utility and pipeline networks, point-to-point microwave is among the most pervasive and critical. Many utilities and pipelines rely on point-to-point microwave as an essential element in their ability to provide reliable, safe and efficient service pursuant to state and Federal guidelines. Utilities and pipelines utilize point-to-point microwave, including spectrum in the 18 GHz band, to meet the following critical functions:

- Protective Relaying – Monitoring and isolating faults on the nation's interconnected electric grid within milliseconds, in order to prevent cascading blackouts impacting tens of millions of people
- Communicating critical operational information between nuclear plants, power substations and central control facilities
- Remotely monitoring and controlling pipeline pressure and flow
- Monitoring and controlling water and water quality
- Remote operation of emergency flood control systems

Utilities and pipelines operate private microwave systems to carry out these functions because often microwave is the most efficient, cost-effective, reliable and secure means of communications available. As part of the 1997 Balanced Budget Act Congress specifically recognized the critical public safety nature of utility and pipeline communications. Moreover, the President's Commission on Critical Infrastructure is currently looking at ways to ensure the reliability and security of the utility and pipeline networks.

Given the reliance of the utility and pipeline industry, as well as other core public safety and public service sectors including police fire and railroads, on the use of private microwave, the FCC should temper its zeal to promote new satellite services so as to not compromise the integrity of essential microwave services. In addition, the FCC must ensure the continued availability of the 18 GHz band for the expansion of existing fixed microwave systems and for the licensing of new fixed microwave systems. In addition to the current fixed microwave use of the 18 GHz band it is expected that there will be a growing need for access to this band as the lower microwave bands become saturated in many part of the country.

B. Satellite Systems Must Be Subject To Spectrum Efficiency Requirements

In order to balance the interests of GSO/FSS operators and FS operators the Commission needs to adopt an approach that is consistent. The FCC's rules require FS operators to conserve spectrum by meeting certain minimum spectrum efficiency standards. Currently FS licensees

within the 18 GHz band must have a minimum transmitter efficiency of 1bps/Hz. New GSO/FSS proponents looking to access the 18 GHz band should be required to meet equivalent transmitter efficiency standards so as to conserve spectrum for all users of the band.

Similarly, the FCC imposes a requirement that FS operators in the 18 GHz band are only licensed for the amount of spectrum for which they actually have a demonstrated need. Sound spectrum management dictates that GSO/FSS licensees should be subject to a comparable requirement. Specifically, GSO/FSS licensees should only be licensed for that portion of the total authorized spectrum that they actually require. For example, each earth station should only be provided a specific block of 50 or 100 MHz within the 18 GHz band. GSO/FSS licensees should only be authorized to use additional spectrum at such time as they are able to demonstrate full utilization of their existing licensed block allocation. In this way FS operators will better be able coordinate around GSO/FSS operations, and spectrum warehousing will be avoided.

C. The Commission Must Protect Continued Use Of 18 GHz By FS Licensees

The existing interference criteria for FS and GSO/FSS in shared bands contained in Part 25 of the Commission's rules is incomplete at best, and one-sided at worst. The current rules are largely premised on the needs of satellite operators and do not adequately consider the operational requirements of FS licensees. For example, there is significant concern over the potential interference that may be caused to existing and new FS systems from the proposed satellite down links, and yet the current rules do not address this issue and no industry validated study has been conducted to examine this issue. This issue must be addressed and resolved. UTC supports the convening of a balanced and representative industry task force to examine this issue under the auspices of the Telecommunications Industry Association (TIA).

The FCC must take steps to ensure that GSO/FSS operators are not allowed to adopt protection requirements that have the practical effect of precluding the expansion of existing microwave systems or licensing of new microwave systems in the general vicinity of GSO/FSS earth stations. The point-to-point microwave community has learned from past experience in the 4 GHz band that when an earth station is located in a particular area, its high interference reduction requirements essentially "freeze" the band from further development of fixed microwave in the same geographic area. At 4 GHz this "exclusion zone" can extend over a 100-mile radius from the earth station. While there are several measures that could be undertaken by FSS earth station operators to facilitate shared use of the band by fixed microwave systems, in the past the FCC has introduced no legal or financial incentive for FSS licensees to take such steps.

UTC urges the FCC to adopt the following requirements to ensure that FS and FSS have equal access to the 18 GHz band. First, the interference criteria given a FSS earth station should not be allowed to exceed the interference protection it accepts upon initial coordination and licensing. Such a requirement would eliminate the potential "Trojan Horse" tactic whereby an earth station accepts existing fixed microwave interference at initial licensing and then attempts to enforce a higher interference standard upon new potential licensees, thereby closing or "freezing out" the area to further fixed microwave use.

Second, there are a number of methods available to reduce interference to satellite earth stations. Often the first step that can be taken is to ensure that the potential fixed microwave operators takes all appropriate steps to ensure that it uses the best frequency reuse techniques available in order to minimize the potential to interference to earth stations. However, despite

the efforts of the microwave licensee to design its system in a manner to avoid interference, the majority of the interference reduction methods are out of the FS operator's control and must be undertaken at the site of the earth station. Therefore, if a fixed microwave operator meets specific technical requirements that demonstrate an effort to minimize interference potential, the FCC rules should compel the FSS operator to take whatever actions are necessary to mitigate potential interference to its system. Such actions could include building burms or fences, using shrouded antennas, limiting minimum look angles, or avoiding the use of certain frequency blocks. Placing some of the burden of mitigating potential interference on FSS operators is equitable because a single earth station can block many FS systems.

Finally, UTC absolutely opposes Teledesic's proposal to allow blanket licensing of GSO/FSS earth stations in the 18 GHz band. Blanket licensing is totally inappropriate for shared bands as it would eliminate frequency coordination which is essential for the application of sharing criteria. The GSO/FSS and FS can only share the 18 Ghz band on a co-primary basis if there is effective frequency coordination between the two services.

II. Conclusion

The Commission must be careful to balance the interests of GSO/FSS operators and existing and future FS licensees in order to ensure that both services have equal access to the 18 GHz band on a truly co-primary basis. Specifically, the FCC should ensure that sharing criteria are developed that consider the needs and potential impact on FS users as well as the satellite community. The FCC should also impose obligations on GSO/FSS licensees to mitigate interference and not allow its interference rules to have the practical impact of precluding FS operations throughout large areas of the country. Finally, the FCC should reject proposals to introduce "blanket" licensing of GSO/FSS earth stations in the 18 GHz band as this would render sharing impossible.

WHEREFORE, THE PREMISES CONSIDERED, UTC urges the Commission to take action on this petition in accordance with the views expressed in these comments.

Respectfully submitted,

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